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LIGHTNING CONDUCTORS.

The physiological definition of lightning pronounces it to be a large bright flame, extending every way to a considerable distance in the lower regions of the air, of momentary duration, and commonly attended with thunder. The generation of lightning was long accounted for by supposing that, from the atomic portions of nitre, sulphur, and other combustible matter, which are exhaled from the earth, and carried into the higher regions of the atmosphere, is formed an inflammable substance, which, when a sufficient quantity of fiery particles is separated from the vapor buoyed up into the air, with these particles adhering to them, by the collision of two clouds, or otherwise, takes fire, and shoots out into a train of light, larger or less, according to the strength and quantity of the materials. In the present advanced state of knowledge, however, this origin, as well as the theory of producing lightning by the fermentation of sulphureous substances, has disappeared; and meteorologists now recognise it as an electrical branch of the mysterious and all-pervading Occult Principle. To be sure, there are a few who still ground their views on the chimerical principle of Des Cartes, and employ ether, light, and elementary fire as the *materia subtilis* of nature's grand operations aloft; but their conclusions are neither exact nor intelligible, albeit they help the Murphy-ites and Weather Almanacs along.

The general circumstances attendant on thunder and lightning are pretty familiar to most persons. Both effects are excited by a sudden explosion of certain dense electrical clouds, which, on this account, are called thunder-clouds—the which are well known to observant seamen, who must often have watched them from a mere jagged fleeciness, to a dark, rolling, misshapen mass, rapidly increasing in volume as it rises into the higher regions of the air, under variable and frequently opposite relative motions. While these concomitants of a thunder-storm are advancing above, the atmosphere at the surface of the earth is still and calm, accompanied with some elevation of temperature, as well as considerable barometric and hygrometric alterations, producing on the animal system indescribable sensations of uneasiness, faintness, and oppression, and appearing even to the brute creation indicative of some awful and impending changes. Lightning-flashes are now perceived at short intervals, and presently, when heavy showers of rain or hail descend, the atmosphere is again cooled. The blackness now becomes universal; the thunder, which before groaned continuously and at sensible intervals after the discharge of the lightning, now roars in a loud and sudden clap almost at the same instant that the lightning is seen descending with immense velocity.

The heavy condensation resulting from a thunder-cloud is often spoken of in a manner which would imply that the cloud possessed some mechanical or other energy, by means of which the violent wind is sent forth; but nothing can be more unfounded than such a supposition. The cloud may, indeed, be the means of electric development, and furnishes also the watery deposition for the hail or rain, but the particles of the cloud are passively inert, like those of a common fog or mist; for the violent winds and disturbing forces, which may be present, operate to produce the cloud, but do not, in any important sense, result from its action.

Meteorologists maintain that when a cold stratum or current of the higher atmosphere moves or rests upon a warm one which is next to the earth, neither stratum, as such, can penetrate or displace the other. Nor can a sudden interchange or commingling take place between the masses or particles of which these strata are composed, except by the slow and tedious process of the successive action and convolution of single particles, or small groups of particles, upon or around each other; but if a communication or interchange between the two strata becomes established by means of the action of a gradually excited whirlwind, or if, owing to any inequality of surface or other accident, a depression is made upon the lower stratum, so as to enable the colder air to descend at this point, then an immediate gyration or convolution will take place in the two masses at this point, the warm air rising as it becomes displaced, and a copious condensation will immediately follow. It is movements of this character which produce the dense and convoluted appearance known as a thunder-cloud, and the thunder, lightning, rain, and hail follow as necessary results. The precipitation of the colder stratum thus commenced is regularly continued and enlarged till an equilibrium is produced, and the thunder-storm thus engendered assumes, of course, the direction of the upper current to which it is appended. The electric phenomena which are induced by this sudden contact or intermingling of masses of air of different temperatures and hygrometric conditions become highly vivid, and too often destructive. Though the real nature of the powerful fluid is yet unknown, the active principle of a thunder-storm, says Mr. Snow Harris, may be considered as an invisible and extremely subtle species of matter pervading all nature, being distributed in bodies in quantities proportionate to their several capacities for it, thereby producing a sort of equilibrium of force in every direction, but possessing a self-ad-

justing tendency in cases of disturbance. In our present knowledge analogy must be used instead of demonstration, and probability must precurse fact. Different views have been taken of the action of the wondrous agency in question, but most of them seem to warrant the conclusion that it consists of an exquisitely subtle form of matter, every where present, and operating between bodies according to certain laws. The skilful experiments of Lavoisier and La Place have shown that the molecules of water, in evaporating, convey away from the earth a portion of its electricity, and which the water has acquired in being converted into vapor. This electricity becomes diffused in the upper regions of the atmosphere, and, when the vapors again become condensed so as to form globules of water, the electricity disposes itself on the surface of the globules in different quantities, according to their magnitudes. When these globules have equal volumes, those quantities are equal; and, equilibrium then subsisting with respect to electricity, no sensible effect is produced: but when a considerable difference takes place between the quantities of electricity on the globules, the tendency of that element to return to a state of equilibrium causes it to pass rapidly in flashes from those globules which have more to those which have less than their mean quantity; and thus, if the condensation be great and take place suddenly, vivid flashes of lightning and loud peals of thunder may occur. The effect is probably the greatest when two masses of clouds, in opposite states of electricity, are carried rapidly against one another by winds blowing in contrary directions. Clouds frequently change from negative to positive electricity; and in M. Peltier's late experiments, he found the negative preponderated in one year, and the positive in another. This opposition in the electrical state of the clouds in different years, may have the effect of rendering the problem to be solved far more complicated than even its many other difficulties promised.

On the whole it may be implicitly received, that the changes of temperature, the electricity of the earth in contact with the air, and that produced by the chemical changes of the various matters of the globe, are the great causes of atmospheric electricity: thus, earthquakes and volcanic eruptions are generally accompanied by violent thunder-storms.

The color of lightning is a variable yellow, depending much on the density of composition of the strata of air through which the discharge takes place. When its course is zig-zag, it is called forked lightning, the aberrations of which show that it is near terrestrial objects, and is therefore justly regarded as dangerous. When the electric discharge permeates generally the surrounding mass of weakly electrised vapor, the appearance is then the sudden and wide illumination known as sheet-lightning. This lightning, though almost inconceivably swift, is harmless, and even beneficial, and indicating the restoration of atmospheric and electric equilibrium after it had been destroyed by the rapid succession of cold to heat. A third branch of this wonderful agent is known as the "fire-ball," from the sphericity of its shape. Compared with the other two, it is slow in its descent to the earth, occupying several seconds in its fall. Hence the instances of globes of fire, and the mischief they occasion, are generally well attested. They have been seen to rebound from the earth, and subdivide, then each sub-ball has exploded, and sometimes with a violent report. On the 13th July, 1798, the Good Hope, Indiaman, in latitude 35° 40′ south, and longitude 42° east, was struck by "lightning of a globular form," which exploded violently, killed one man, and wounded several; and in February, 1809, the Warren Hastings, a new Indiaman at Portsmouth, was three times struck in the masts, and each time by a ball of fire.

Thunder is an explosion accompanied by a loud noise, which is heard after a discharge of lightning from the clouds. The character of the noise is variable, from the near sharp rattle of small-arms to the distant roar of great guns; but though the identity of lightning with the electric fluid is now well known, the physical cause of the detonation which accompanies the flash is still the subject of conjecture. The rolling prolongation of the report has been attributed to the echoes caused by the reflection of sounds from mountains, buildings, or clouds. But this will not afford a satisfactory explanation of the long rolls, which have been known to have a duration of more than forty seconds. Dr. Hook ingeniously supposed each spark of lightning to produce its separate report, and each flash consisting of a great number of these sparks, each farther from us than the other, and, though caused cotemporaneously, the sound of each reaches us successively, according to its distance. The flashes of lightning, Dr. Hook observes, are either simple or multiple; the first occupies but one small portion of space, and gives rise to an instantaneous report; the multiple flash takes place at different parts of one long line. If these parts should be situated in a circular arc, and the observer should be in its centre, all the reports would arrive at his ear at the same time, and still one loud crash only would be heard; but if the parts were nearly in a straight line, and the observer were at one of the extremities, the reports, whether they take place at the same instant or in succession, would arrive at his ear at different times, depending wholly or partly on the differences.

Such are the received opinions upon thunder and lightning in general; yet a notion prevails, that thunder has been heard when the sky was without a cloud; but this may have resulted from subterranean causes. M. Arago thinks that thunder without lightning may descend to us from an upper stratum of clouds, whilst the lower obstructs our sight, for a density obstructing light may be permeable to sound. On the other hand, lightning without thunder is of frequent occurrence, and has been pretty well reasoned upon. Ages ago, Seneca pronounced these fulgurations to be powerless from their distance; and, in our day it is shown that thunder can scarcely be heard more than twenty or thirty miles from the flash, but that lightning, or at least its reflection on the clouds, may be seen at a distance of two hun-

dred miles. Supposed remoteness, however, will not always explain noiseless lightning.

A mention must here be made of the harmless lambent flame called Comazant or Compasant—corruptions of Corpo Santo—among our seamen, and occurring towards the close of storms, at the mast-heads and other saliant points. As the appearance of this luminous substance took place simultaneously with the subsidence of the wind, the ancient *Metereoleschæ* viewed it as a type of Divine power and providence. Hence the Castor and Pollux which settled on Lysander's ship, and other recitals of the ancients, which were duly transmitted to the Christians, who soon recognised St. Elmo, St. Nicholas, St. Peter, Corpo Santo, Sant Anna, and Santa Chiara, in this silent phosphoreal vapor. Numerous evidences are afforded in the old voyagers of the influence of this Christiano-paganism, amongst which the chants and acclamations of the sailors of Columbus in 1493, and of Magellan in 1520, are not the least interesting to nautical readers; nor will poor Falconer's description be forgotten:

> "High on the masts, with pale and livid rays,
> Amid the gloom portentous meteors blaze."

We have more than once seen this phenomenon enveloping the mast-head, and its undulating blaze of phosphorescent light was always hailed with pleasure, as the harbinger of better weather. We have never known them but as attendants of a storm, and averters of the danger with which a ship is threatened when surrounded by an electrised atmosphere. "About four o'clock," says Dampier, "the thunder and the rain abated; and then we saw a *Corpus Sant* at our maintop-masthead, on the very top of the truck of the spindle. This sight rejoiced our men exceedingly; for the height of the storm is commonly over when the *Corpus Sant* is seen aloft." But there are exceptions to this rule, though, from the result of our inquiries, they must be very rare. In the Philosophical Transactions we find a remarkable instance, to this effect: "January 9, 1748, the new ship Dover, bound from New York to London, being in latitude 47° 30′ north, and longitude 22° 15′ west from London, met with a very hard storm of wind, attended with thunder and lightning, as usual, most part of the evening, and sundry very large comozants (as we call them) overhead, some of which settled on the spintles at the topmast-heads, which burnt like very large torches; and at nine P. M. a single loud clap of thunder with lightning struck the ship in a violent manner, which disabled myself and great part of the ship's company in the eyes and limbs; it struck the mainmast about two-thirds up almost half through, and stove the upper deck, one carling, and quick-work; part of which lightning got in between decks, started off the bulk-head, drove down all the cabins on one side of the steerage, stove the lower deck, and one of the lower deck main lodging knees. Another part of it went through the starboard side, without any hurt to the ceiling, (or inside plank,) and started off from the timbers four outside planks, being the whale upwards; one of which planks, being the second from the whale, was broke quite asunder, and let in, in about ten or fifteen minutes, nine feet water in the ship. It also drew the virtue of the loadstone from all the compasses, being four in number, all in good order before."

From the great velocity of lightning it is difficult to say when it ascends or descends. Many conclude that it always flashes downwards, but there are undeniable local marks that it sometimes flies upwards. The clouds influence the portions of the earth near them, and occasionally so strongly as to draw the lightning from the earth. The ancients remarked this singular phenomenon, for Pliny describes the land of Etruria as emitting thunders. But there are many remarkable local peculiarities. While Rio Janeiro is frequently visited by well-charged clouds, Lima knows neither thunder nor lightning; nor are these phenomena ever experienced in the polar regions. In Magellan's Straits the squalls called *williwaws* are very frequent, and tremendously severe; but, according to the observations of our friend Capt. King, lightning and thunder are seldom known there. Whether geological or other circumstances affect this is still uncertain; yet there is such a disparity in the frequency, without much distance, that suspicion attaches to locality. M. Arago asserts that there is twice as much lightning at Orleans as at Paris, and three times as much at Jamaica as in the neighboring islands.

An impression had very generally obtained that thunder-storms were more frequent and dangerous over mineral countries than any other. This is not countenanced by the comparative exemption of the mining districts of Peru and Wales as contrasted with the ravages at Calcutta, Madras, Malta, and the Gulf of Syrtis. The channel of Corfu is pretty notorious for its repeated illuminations; and as to Terracina, 'tis just as bad as when Pliny grumbled about it. In 1803, our esteemed friend, Mr. L. W. Dillwyn, of Swansea, furnished a distinct list relative to the mines of several districts, storms being less frequent where they are richest, and most numerous in calcareous parts. According to M. Arago, a concurring testimony occurs in Mayenne, where the *grünstein* contains much magnetic iron; for approaching storms are there said to clear off, or change their direction. Still the impression as to the *habits* of thunder-storms was altogether on the contrary side; and we well remember, on passing that electric space, the south coast of Ceylon, and "wondering" why the lightning was so vivid and so common there, receiving for answer, "Ah, there must be some vast mines in that island." Mr. Dalton, who visited some of the Borneo tribes, and has resided several years in the eastern Archipelago, says, "Approaching within twenty miles of Pergottan, the main land has a most dreary and desolate appearance: the higher mountains are far inland; the coast broken, and studded with rocks. The soil about this part is strongly impregnated with mineral ore; neither animal, tree, or plant live on a surface of at least a thousand square miles. The natives entertain a superstitious dread of the country, conceiving it to be the peculiar abode of evil spirits. In no other part of the world have I observed lightning have so tre-

mendous an effect, that of a forked description playing upon the ground for a space of several minutes in infinite mazes of zig-zags. In whatever part of the heaven the lightning appears, to this spot it is always attracted. We were off this place three days, viz: November 21, 22, and 23, 1827, and each night was the same; and from all I could learn, the effect is much the same all the year round, but particularly so at the change of the monsoon. Of course, there are no inhabitants near the place, on which is scarcely to be seen a blade of grass. The iron is here of very superior quality, as every one who has visited *Banjer-massin* must have remarked."

Gentle reader, here are two decided opinions upon a subject of too grave an importance for the *utrum horum mavis accipe* of slighter questions: it is one which calls for observation, inquiry, and precise registry.

This, however, is far from being the only unsettled point upon matters of such frequent occurrence. The comparative frequency or infrequency of thunder in the open sea, which any sailor might look to, is yet in an undecided state; as is also the height to which storm-clouds reach, the process for obtaining which trigonometrically, though so very easy, has hitherto been strangely neglected, to the retardation of meteorology as a science. The distance of the thunder, so important an element, never appears on the registers, though every one with a watch and a pair of ears is regularly equipped for being useful. To the beginner we may here observe, that the flash of the lightning and the report of the thunder take place in reality at the same moment; but since sound travels at the rate of 1,100 feet per second, while the passage of light from the cloud to the observer may be considered as instantaneous, because the velocity may be equal to 80,000 leagues per second, it follows that, on counting the number of seconds which elapse between the time of seeing the flash and hearing the report, the distance of the thunder-cloud from the observer might be ascertained if 1,100 feet be multiplied by that number of seconds. Straw-splitters may like to carry out fractions, and therefore must take the pace of sound at 1,105.663 feet; but the round number will answer all available purposes.

Such is the potent enemy, which for ages rioted in unimpeded devastation of life and property, with a truly omniverous propensity, alike destroying man, beast, ship, boat, tree, church, castle, palace, and cottage; even the fishes of the sea cannot be said to enjoy immunity. Our object here, however, being principally directed to the Royal Navy, we will endeavor to show the ravages of this formidable antagonist in that quarter; and it is rather discreditable that, though science has long since shown a tolerable cure, and a talented individual a radical one full twenty years ago, the mischief has been allowed to continue. In demanding a permanent security at all times and under all circumstances against the injurious effects of lightning, nothing chimerical is asked. We can assure those men who plume themselves upon a perpetual scepticism, and who treat every new attempt of philosophy as a rash effort, that the means are at once available and cheap. Herein is no hyper-excited plan for conveying merchandise in vacuo, at the rate of (to use Mr. Valance's words) "not exceeding perhaps two or three hundred miles an hour;" nor is there any design of going from London to Calcutta in four days by a machine which demonstrably cannot fly.

Before entering upon the means of averting the calamity, it may be proper to show its extent, and the loss to the country in services of ships, in men, and in money. Mr. Snow Harris, the crippler of lightning, has very ably shown this, in discussing the accidents which befel three men of men-of-war in the last century; and thus he argues:

"The loss to the country in *money*, although comparatively the least important, when we consider that our seamen are liable to be struck dead or seriously injured, and that the nation may suffer in its maritime ascendancy, is still of ruinous amount.

"In estimating this, we have not to consider merely the workmanship and materials for making good defects; but likewise the amount expended in wages, provisions, &c., during the time a ship is rendered unfit for service; money being paid on account of a vessel, rendered, as it were, *hors de combat*, by lightning, or so disabled as to be incapable of performing the duties required of her; she is for the time in the state of a vessel temporarily wrecked. The actual loss, however, arising in this way, becomes quite apparent when it is remembered, that in case of a vessel on an important station being rendered unfit for service, it frequently becomes necessary to replace her by another immediately, whenever that can be done. Hence an additional number of ships are required to provide for such casualties. Considering, therefore, these three elements in the instances abovementioned, they will be as follows:

"1st. The Thisbe, a frigate of 32 guns, and 200 men, obliged to leave her station, several of her crew hurt or disabled, and the ship reduced to such a wreck, as would, in the full activity of a naval war, have rendered her an easy prize to a much inferior force, her masts shivered, sails and rigging on fire, mainmast cut away and all its accompanying gear lost, mizzen-topmast lost, fore-topmast carried away, foremast rendered unserviceable, one of the boats destroyed.

"The consequent loss to the country in workmanship and materials in making good defects, together with the paying off and recommissioning the ship, &c., &c., cannot be estimated, on a moderate calculation, at less than £6,000.

"2d. The Lowestoffe. In this case the Mediterranean fleet lost for upwards of two months the services of a frigate, so crippled by lightning, that, had she fallen in with an enemy, as happened shortly after her refit, she must necessarily have been taken. Her masts and rigging on fire during the storm, mainmast shivered and cut away, main and fore topmast destroyed, fore-topsail yard lost, two men killed, many burnt and disabled, others benumbed.

"The loss to the country on account of the damage sustained in this instance, cannot be estimated at less than £5,000.

"3d. The Russell, of 74 guns. In this instance our fleet off Ushant, while daily exposed to the chance of a general action, lost the services of a line-of-battle-ship, her masts being crippled, her first lieutenant and two men killed. The actual loss to the country on account of the damage sustained by this ship, taking into account the detention and refit, would not certainly be less than £5,000.

"Upon a review, therefore, of these three cases only, we find an expenditure of £16,000 and upwards; the services of a line-of-battle-ship and two frigates lost, at a time when, in two instances, urgently demanded; one lieutenant and four men killed, and many burned, or otherwise severely hurt or disabled."

But Mr. Harris proceeded much farther into the statistics of lightning, viewing the possibility of defending ships against it, for the most part, as a question of observation and experiment. He therefore rummaged the official log-books for evidence, and mustered 174 cases; but as in 60 of them he could not correctly ascertain the damage, he confined his reasoning to 47 line-of-battle ships, 49 frigates, 17 brigs, and a cutter, of which there were:

Struck by lightning,	on the mainmast,	68
"	on the foremast,	28
"	on the mizzenmast,	5
"	on the bowsprit,	1
"	on the fore and main,	6
"	on the main and mizzen,	5

In about 100 of these cases of damage, Mr. Harris found that the number of seamen killed was 62, and wounded 114, exclusive of one instance, in which the number of killed is denoted as several, and that of the Resistance, of 44 guns, in which only four people were saved. And we apprehend that various vessels reported "missing," and "never since heard of," have shared the fate of the Resistance. Of the spars damaged or destroyed we find—

	Line-of-battle-ships.	Frigates.	Vessels under 30 guns.
Lower masts,	43	29	21
Topmasts,	36	26	21
Top-gallant and royal,	23	18	19
Bowsprit,	1	—	—

Now the loss to the nation in service, in men, and in money, in three cases above cited, will form a scale to judge of the expenses incidental to these damages. And he who seriously contemplates them will be aided by being told, that the loss upon each lower mast of the line-of-battle ships may have been about £600, including the workmen for repairs and refitting; on the topmast, £100; upon the lower masts of frigates, £350; topmast, £80; upon the lower masts of the smaller frigates and brigs, taking one with the other, £150; topmasts, £40. This estimate shows a vast expenditure, and yet does not include the top-gallant and royal-masts, occasional injury to the yards, and the damage done to the rigging.

M. Arago, in his *Annuaire* for 1838, makes reference to the "excellents mémoires de M. Harris sur les paratonnerres;" and from them and enquiries he undertakes to illustrate an aphoism of the *campagnards*—"Thunder is most dangerous in cold weather." These are his results, and show the number of ships struck in each month.

January,	8	July,	2
February,	6	August,	1
March,	1	September,	6
April,	8	October,	2
May,	0	November,	4
June,	0	December,	4

From the authentic list of the ships struck by lightning, which was presented by Mr. Harris to the Lords Commissioners of the Admiralty, we will select those which have been damaged during the present century, as a record in illustration of our argument; and we are enabled to add a few particulars, from our own documents and recollection. The following enumeration cannot contain the whole of the accidents since 1800; but it is quite sufficient to show that a remedy was called for. Among the ships named in the Report of the Lightning Committee, printed by order of the House of Commons, in 1840, we observe the Aid, sloop-of-war, said to have been struck in August, 1819, and the main-topmast shivered; this ship has been inserted in error, for though that spar was found sprung, in the port of Pola, and had to be shifted, it was not imputed to the effect of lightning. The following is a brief but comprehensive history of the cases of damage under consideration, and we may safely vouch that the last forty years of the nineteenth century, passing under a similar meteorological cognizance, the catalogue of disaster will not equal a tithe of the first forty.

Ajax, 74, 1813.—Off Toulon. One of Sir Edward Pellew's fleet. Main-topmast shivered, and mainmast disabled.

Active, 38, 1802.—In Gibraltar Bay. One man killed. Mainmast damaged, main-topmast and top-gallant-mast destroyed.

Apollo, 38, 1811.—On the Mediterranean station. Spars wounded, but the particulars not correctly ascertained.

Arethusa, 38, 1811.—At Sierra Leone. One man wounded. The main-topmast shivered, and the mainmast damaged.

Achates, 14, 1812.—Damaged mainmast.

Arrow, 12, 1810.—The mainmast disabled.

Armada, 74, 1811.—Basque Roads. Foremast set on fire. Men struck down on the decks.

Albion, 74, 1817.—Mediterranean. Foremast wounded, and one man killed. This ship was also struck at Portsmouth, in 1821.

Atholl, 28, 1831.—Coast of Africa. Shivered fore-topgallant-mast, topmast, &c.

Ariadne, 24, 1805.—Bermuda. Split fore-topmast, and topgallant-mast. Several men severly hurt.

Alexander, 74, 1801.—Port Mahon. Lost her main-topmast.

Ætna, 6, 1830.—Corfu Channel. Foremast slightly struck. One man dreadfully burnt, and nearly all that were forward knocked down.

Bellerophon, 74, 1807.—Off Rochfort. Main topmast shivered, main and mizzenmasts damaged, perforated quarter-deck, started a butt end in the side. One man killed, and eight wounded.

Bellepoule, 38, 1809.—On the blockade of Corfu. Several spars seriously injured. Two men hurt.

Barfleur, 98, 1812.—Off Toulon. Fore-topmast shivered, foremast damaged, light-room windows of fore magazine shattered.

Badger, 10, 1822.—Chatham. Mainmast damaged, in ordinary.

Bloodhound, 12, 1812.—Coast of Newfoundland. Mainmast shivered, sails rent.

Buzzard, 18, 1812.—At Minorca. Lost main-topmast and topgallant-mast, &c.

Conquestador, 74, 1813.—West Indies. Spars injured, and several men hurt.

Cressy, 74, 1812.—Off Cherbourg. Lost mainmast.

Chanticleer, 10, 1822.—Corfu. The mainmast shivered from the truck to the deck.

Clinker, 12, 1829.—Coast of Africa. Lost her mainmast.

Chicken, 14, 1828.—Fernando Po. Masts damaged. Lost mainmast.

Clorinde, 40, 1813.—Off Ceylon. Mainmast shivered from masthead to deck. Two men killed, five seriously wounded, and many hurt.

Caledonia, 120, 1810.—In Basque Roads. Foremast damaged, fore-topmast and topgallant-mast shivered, and several men wounded.

Ceylon, hulk, 1839.—Malta. Fore-topmast shivered, and foremast wounded.

Druid 46, 1829.—West Indies. Several spars injured, but particulars of the damage unknown.

Dryad, 42, 1828.—Mediterranean. Damage not ascertained.

Doris, 36, 1808.—East Indies. Spars wounded and several men hurt.

Desirée, 36, 1803.—Jamaica. Mainmast shivered. Two men hurt.

Dragon, 74, 1801.—Mediterranean. One man killed, and several severely wounded. All the men in the maintop were injured. The same ship was struck in 1810, when the mainmast was disabled.

Eolus, 32, 1809.—West Indies. Foremost damaged severely.

Eden, 26, 1822.—River Thames. Particulars not ascertained.

Elk, 18, 1816.—East Indies. The foremost shivered.

Esk, 20, 1827.—Off the River Benin. Main-topmast and topgallant-mast splintered. One man hurt.

Gloucester, 74, 1830.—Malta. Mainmast crippled and shivered. Main-topmast destroyed. Ship obliged to refit.

Goliah, 74, 1802.—West Indian. Foremast splintered, topmast topgallant-mast shivered. Two men killed and thirteen wounded.

Gibraltar, 80, 1802.—At Gibraltar. Lost foremast, also fore and main-topmasts. Three men wounded.

Griffon, 14, 1808.—West Indies. Lost her mainmast.

Galatea, 36, 1805.—West Indies. Lost her fore-topmast and topgallant-mast. Several men wounded.

Glory, 98, 1805.—Off Cape Finisterre. Main-topmast shivered and mainmast damaged. Several top-men severely hurt. This was one of Calder's fleet, and a flag-ship, and the crippling occurred just before engaging the combined fleets of the enemy.

Généreux, 80, 1801.—Port Mahon. Lost fore and main-topmast, mainmast severely damaged, and the ship disabled from pursuing the enemy.

Guerriere, 38, 1812.—Coast of America. Mainmast badly wounded, and she engaged the Constitution with it in a tottering state.

Hyacinth, 20, 1833.—Maldives. Fore and main-topmasts and topgallant-masts shivered. Head of the foremost rent.

Haerlem, 64, 1800.—Mediterranean. Her mainmast disabled.

Hector, 74, 1801.—Mediterranean. Spars wounded; but amount of damage not ascertained.

Hydra, 38, 1808.—Off Sicily. Mainmast shivered from the truck to the deck. Obliged to return to Malta.

Hibernia, 120, 1813.—Off Toulon. Amount of damage not ascertained.

Helder, 32, 1811.—Off Copenhagen. Mainmast shook from the truck to the deck, with other damages. Ship sent home in consequence.

Helicon, 10, 1812.—Plymouth. Mainmast struck. One man wounded.

Heron, 18, 1828.—South America. Foretopsail-yard shivered in the slings, foremast damaged through the centre, and other damages.

Implacable, 74, 1811.—Off the Isle of Wight. Mainmast severely damaged, fore and main-topmast and topgallant-masts shivered in splinters, foretopsail-yard carried away in the sling, eyes of main rigging set on fire, and several men hurt.

Indefatigable, 44, 1806.—In the Bay of Biscay. Two men severely wounded.

Impérieuse, 38, 1800.—East Indies. Mainmast wounded, and a lower-deck beam injured.

Kent, 74, 1810.—Off Toulon. Mainmast destroyed, and the whole of the spars wounded. One man killed. Returned to Port Mahon to refit.

Loire, 40, 1809.—Cadiz Bay. Mainmast, topmast, and topgallant-mast shivered. Two men killed.

Larne, 20, 1820.—Mediterranean. Slight damage to the spars and gear. Two men killed.

Lively, 36, 1805.—Bay of Naples. Particulars not ascertained.

Lynx, 3, 1836.—Coast of Africa. Slight damage to the masts.

St. Lawrence, 112, 1814.—Lake Ontario. The mainmast destroyed. One man killed and ten wounded.

Melville, 74, 1830.—Malta. Mainmast damaged from the truck downwards. Detained to refit and get a new mast.

Magnificent, 74, 1814.—Off Ushant. Lost main-topmast and topgallant-mast, and damaged the mainmast.

Musquito, 10, 1830.—Off Corfu. Ship struck in several places, two sails set on fire and cut away.

Madagascar, 46, 1830.—Corfu. Mainmast-head set on fire, mainmast and mizzen-topmast severely damaged. Ship detained to refit.

Milford, 74, 1814.—Plymouth, in ordinary. Jury-mast injured.

Medina, 20, 1830.—At Whydah. Her mainmast injured.

Monmouth, 64, 1802.—At Naples. Several spars injured, and three men wounded.

Minerva, 32, 1812.—West Indies. The foremost disabled.

Mercury, 28, 1801.—Mediterranean. Mainmast damaged and two men killed.

Nereus, 32, 1814.—Rio de la Plata. Main-topmast shivered in splinters and mainmast disabled.

Niemen, 38, 1814.—Halifax. Lost her mainmast.

Norge, 74, 1815.—Port Royal. Splintered main and mizzen-top, and topgallant masts. Four men hurt.

Ocean, 98, 1813.—Off the Rhone. Main-topmast split in pieces and mainmast damaged. Obliged to return to Port Mahon. This ship was again struck at Smyrna in 1829, but escaped with a slight damage to the main-topmast.

Orlando, 36, 1815.—At Smyrna. Main-topmast and topgallant-mast destroyed, and mainmast disabled. Several men hurt. Ship obliged to go to Malta to refit.

Pique, 36, 1804.—Jamaica. Damaged considerably. Particulars not ascertained.

Palma, 38, 1814.—Carthagena. Fore-topmast and topgallant-mast shivered, the foremast grazed, and one of the main-deck beams splintered. One man killed, six hurt severely, and many slightly hurt.

Phaeton, 38, 1824.—Gibraltar. Foremast shivered. from the truck to the deck, and set on fire. Several men struck down.

Primrose, 18, 1828.—Sierra Leone. Lost her main-topmast. A man wounded.

Pomone, 38, 1806.—Off Ushant. Particulars not ascertained.

Pelican, 18, 1837.—Coast of Africa. Off the Bonny. Fore-topmast shivered, and foremast wounded.

Pompée, 80, 1809.—West Indies. Amount of damages unspecified.

Preston, hulk, 1822.—Woolwich. The sheers struck.

Prince George, hulk, 1826.—Portsmouth. Topmast totally destroyed. (An old 98.)

Port Mahon, 18, 1805.—Jamaica. Mainmast shivered from the truck to the deck. One man hurt.

Phenix, 36, 1801.—Mediterranean. Particulars not ascertained.

Queen, 74, 1815.—Messina. Main-topmast destroyed, damaged mainmast, and a main-deck beam injured. Obliged to go to Malta to replace the mast.

Radamanthus, 2, 1837.—Santander. Main-topmast shivered. (Steam Frigate.)

Revolutionnaire, 38, 1816.—East Indies. Disabled in the mainmast.

Royal Sovereign, 100, 1809.—Off Barcelona. Main-topgallant-mast shivered, and two men killed. She was also struck in 1813, in Hamoraze, and had her foremast damaged.

Repulse, 74, 1810.—Coast of Catalonia. Mainmast splintered from the truck to the deck. Seven seamen and a boy killed, three mortally wounded, and ten more or less hurt.

Ruby, 64, 1810.—In the Great Belt. Main-topmast and topgallant-mast demolished; mainmast slightly damaged.

Royal George, 100, 1813.—Off Toulon. Particulars not ascertained.

Royal Oak, 74, 1811.—Basque Roads. Slight damage to her spars. She was afterwards struck at Bermuda, 1829, on the mainmast, and was nearly burned.

Renown, 74, 1801.—Mediterranean. Damaged and disabled in the mizzen-mast.

Racer, 16, 1824.—Off Carthagena. Fore-topmast and main-topgallant-mast destroyed, and some of the gear injured.

Spartiate, 74, 1827.—Lisbon Station. Slight damage.

Sappho, 18, 1820.—Atlantic Ocean. Foremost splintered from the truck to the deck. Seven men killed, three mortally wounded, and fourteen hurt.

San Josef, 110, 1813.—Mouth of the Rhone. Main-topmast and topgallant-mast shivered, and some of the gear injured.

Swiftshure, 74, 1806.—This ship had her fore-top-sail set on fire, but no other particulars are given.

Sabrina, 20, 1811.—Damaged mainmast. Two men hurt.

Sultan, 74, 1808.—Off Mahon. Jib-boom shivered and bowsprit damaged. Seven men killed and three severely injured. In 1812 she was again struck, off Sardinia, and had her mainmast split.

Southampton, 52, 1832.—In the Downs. Damaged mizzen-mast, ten beams injured. The electric fluid penetrated to the after magazine.

Squirrel, 24, 1805.—Coast of Africa. Struck twice, and destroyed two main-topmasts, and two topgallant-masts. The mainmast was so splintered that no sail could be carried on it, all the caulking from the fore to the main-chains loosened, and one plank stove; the ship made in consequence eight inches of water an hour.

Surinam, 16, 1806.—Off Belleisle. Mainmast went in three pieces, compasses rendered useless, two men killed, and much other damage.

Superb, 74, 1802.—Gibraltar Bay. A slight case.

Stately, 64, 1801.—Mediterranean. Loss of main-top and topgallant-masts.

Scipion, 74, 1813.—Off Toulon. Main-topmast shivered, and mainmast damaged. Obliged to go to Port Mahon to refit.

Success, 32, 1820.—At Malta. Main-topmast and topgallant-mast shivered, and the mainmast damaged.

Staunch, 16, 1807, Rio de la Plata. Fore-topmast and topgallant-mast shivered, and bunt of topsail set on fire.

Tonnant, 80, 1804.—Bay of Biscay. Mainmast damaged. One man killed and ten wounded. She was afterwards struck in Cawsand Bay, 1812, and severely damaged her fore and mainmast.

Trusty, 50, 1801.—Malta. Lost mainmast, and other damage.

Thames, 32, 1808.—This ship is reported to have been struck with some severity, but the particulars are not ascertained.

Tigre, 80, 1809.—Mediterranean. Lost her mainmast.

Tamar, 26, 1825. River Hooghly. Mainmast shivered from truck to deck. Three years before she had been similarly struck at Jamaica.

Topaze, 38, 1802.—West Indies. Mizzen-mast shi-

vered from the truck downwards. One man killed, three mortally wounded, and three hurt.

Triumph, 74, 1803.—Mediterranean. Mat on main-yard set on fire. Two men knocked overboard.

Thetis, 38, 1828.—Rio de la Plata. Fore-mast and fore-topmast shivered.

Talavera, 74, 1834.—Archipelago. Particulars not ascertained.

Talbot, 28, 1834.—South America. Lost her main-topmast.

Theseus, 74, 1803. St. Domingo. Fore mast shivered from the truck to the deck. One man killed close by the fore magazine. The panic was frightful; the people rushing up the hatchways, under an impression the ship was sinking and the magazine on fire, were with difficulty prevented from jumping overboard.

Union, 98, 1813.—Off Toulon. Main-topmast shattered in pieces, and much gear damaged.

Ville de Paris, 110, 1813.—Off Toulon. Several spars injured. Five men hurt.

Valiant, 74, 1813.—Off Boston. Main-topmast shivered, and mainmast-head damaged. Ship obliged to repair to Halifax.

Victor, 18, 1802.—Off Point de Galle. Hurt in her spars, and a rider underneath the deck split. Four men thrown down.

Warrior, 74, 1810.—Messina. Particulars not ascertained.

Wasp, 18, 1814.—Coast of America. Main-topmast shivered, and lost overboard, mainmast so much damaged as to be unserviceable. Two men killed, and several hurt.

Such is the awful list of detriment which has been allowed to disgrace the first forty years of the present century. [*To be continued.*]

The Royal Navy.—We find the navy at the present moment to consist of 230 vessels of all descriptions, mounting 3,471 guns, viz: 3 yachts, 14 sea going line-of-battle-ships, 31 frigates, 35 sloops-of-war, 34 smaller vessels, 68 steam-vessels, 25 surveying vessels, (including 9 steamers,) 9 troop ships, 1 hospital ship, and 10 stationary guard ships.

	Guns.
Our force at home consists of - -	- 780
Mediterranean, - - - - -	- 653
Brazils, - - - - - -	- 451
East Indies, - - - - -	- 566
Cape and coast of Africa, - - -	- 293
North America and West Indies, -	- 315
Particular service, - - - -	- 232
Surveying, - - - - -	- 120
Troopers, - - - - - -	- 58
Lakes, - - - - - -	- 3
	3,471

This is an augmentation of 8 vessels, but a reduction of 384 guns, since the commencement of the year.—*Hampshire (England) Telegraph.*

Improvements in Metal for Ships.—Mr. William Fairbairn, of Manchester, engineer, has obtained a patent for "*certain improvements in the construction of metal ships, boats, and other vessels; and in the preparation of metal plates to be used therein.*"—They consist in preparing or rolling the iron intended to be used in the construction of ships and vessels, by forming at each edge, and the whole length of the plate, a raised border,—or, in other words, the plate is made at each side or edge, where the rivets pass through, something like double the thickness of any other part of the plate: one side of the plate being plain, which is to be the outside in the construction of a vessel, the other side having two projecting edges, or borders. The rivet-holes on the plain side of each plate are to be countersunk, so that the head of the rivet may be flat or flush with the face of the plate; and in joining two or more plates together, they are not to overlap each other, as hitherto practised, but the plates are placed with their edged together; and behind the two is placed a metal band, bar, or rib, perforated with a double row of holes, to correspond with the holes in the ridge of each plate, and the whole are firmly riveted together so as to form a water-tight joint; and where greater security or strength is required, the metal bands or bars are made in the form of a T, or with a projection on the back side; by this arrangement the resistance of a vessel in the water will not be so great, and the plates at the parts where the rivets pass through will be equal in strength to any other part of the plate; whereas, in those of ordinary construction, the plates are considerably weakened by making the rivet-holes, as such parts have always been found to give way when the plate itself has remained entire.—*Record of Patents.*

The Wind.—Experiments of an interesting character have recently been made at Rochefort, France, with a newly invented instrument, constructed as follows: A thin plate of wood, three or four inches long, is suspended so as to vibrate freely, like the needle of a magnet on a pivot of steel, by means of a cup of agate inserted in the wood. At one extremity of the wooden plate, extending about one third of its length, is a fissure, in which are adjusted three or four magnets, ranged in a straight line, at the distance, one from another, of half an inch. These magnets are very light, made of watch springs straightened and cut in small pieces, and varying in length from one to three inches. They are set in a direction perpendicular to the horizon. Consequently their polarity is neutralized; but the south pole of each is made to point below, and its north pole above the plane of the wooden plate. The instrument, when placed on a table, in a room, and under shelter of a glass bell, at the expiration of some seconds takes the direction of the prevailing wind, the end furnished with magnets acting the same part as the point of a vane.

The experiments made with this instrument suggest some interesting inductions, both in reference to the connection of magnetism with electricity, and to the probability that variable winds are the result of electric currents. But that which gives to the invention its highest value is, perhaps, the fact that it indicates any approaching change in the direction of the wind, from a quarter to half an hour before its actual occurence, just as the barometer indicates changes in the weather.

Domestic Miscellany.

From the Mercantile Journal.

TEMPERANCE AT FORT JESSUP, LA.

The following communication from the U. S. Chaplain. at Fort Jessup, contains some exceedingly interesting information, and exhibits in a strong light the glad consequences which must result from the establishment of the principles of total abstinence in our army and navy:

Mr. SLEEPER: The temperance reform at Fort Jessup is worthy of notice, as it occured in the army, and under peculiar circumstances. Seven companies U. S. Riflemen (late 2d dragoons) have for some time garrisoned this post. There was a loud call for a reform, and in September last a genuine Washingtonian Society was formed, whose members were pledged to entire abstinence from all intoxicating drinks during the term of their enlistment. It was an *experiment*, commenced in weakness and fear, and had it not been for the interest exhibited by Col. Twiggs, commanding officer, this feeble beginning might have been delayed, so discouraging was the prospect.

But this society, in face of difficulties and bitter persecution has held on its way, waxing stronger and stronger, till it now embraces about two hundred members. Of this number are many that a few months ago were the most inveterate drunkards at the post, now reformed and saved. No compulsion has been used, yet the society has grown up amidst every temptation to intemperance and dissipation.

A large number of the officers at the post have signed the pledge, while the men have the management of the society. And during this reform, the men have been exposed to hardships and all the severities of the weather in rebuilding the post. Through last winter and the excessive warm weather at present, about one hundred and fifty men have been laboriously employed, and the temperance men have endured the "summer's heat and the winter's cold" better than those who drink their grog. Maj. Fauntleroy is now hurrying forward the building; still the reform goes on, twenty-seven having signed the pledge last Sunday evening. Connected with the society is a reading room and savings bank. The Chapel has been open during the week, where the men assemble day and evening when off duty, to inform and amuse themselves with newspapers and periodicals instead of wasting their time in grog-shops and gambling-rooms. The savings bank is designed as a depository for the soldier's money, so that when he leaves the service he will have enough at least to give him a respectable appearance when he returns to his friends and home. The amount thus saved is already several hundred dollars, as I am informed, and every pay-day is adding to the sum.

The society had a cold water celebration on the fourth of July, in elegant style. A procession, composed of the society and its officers, was formed in the garrison at ten o'clock, and bearing a tasteful, appropriate banner, and attended by the regimental band, moved through parade to the theatre, where officers, their ladies, and citizens were assembled.

Prayers were offered, the Declaration of Independence was read, and afterward an address was delivered by the President, a sergeant of D. company, which for beauty and spirit would well compare with the effusions of the popular citizen orator upon whose lips the charmed multitude hung that day with rapture. At two o'clock the menbers sat down to a temperance dinner, during which the most perfect harmony and hilarity prevailed. A variety of sentiments were presented, which were heartily responded to in the use of pure water, the only drink that God ever made for man. The celebration closed with a temperance ball in the evening, and here the same order and elegance prevailed. The room was superbly decorated with magnolia and other evergreens and flowers, and hung with banners. This was a new thing in this region, and at this post; and was it not a new thing in the army?

There was a moral beauty and sublimity in this exhibition. Here in this procession were men, neat and clean, rejoicing in health and *new life*, passing the very spot in parade where a few months ago they stood on barrels, appearing like mummies, with their heads shaved and their faces blackened, as the punishment of incorrigible drunkards. It strengthens our faith to see men thus reformed by the power of *moral suasion*, whom *punishment*, often repeated, has neither reclaimed nor restrained. Many a wayward youth having broke away from the restraints of a virtuous home at the North, joined the army, and, after various removals and hardships, came to fort Jessup, and here were reclaimed and made happy. The evidences of this reform are also seen in the diminution by more than one half of the amount of ardent spirits drank at this post, in the almost entire absence of courts-martial and punishment for drunkenness, in the small number confined in the guard house and hospital, in the health and promptness of the men, and respect for the officers, and in the general peace and order of the garrison. Shall not temperance societies be formed at all military posts in our country? Who will aid in reforming the army? Here is a new field for benevolent action.

H. J. LAMB, *Post Chaplain.*

A NEW METHOD OF FINDING A SHIP'S POSITION AT SEA.—A thin octavo volume, with the above title, was a few days ago laid upon our table, in which the author, Captain Thomas H. Sumner, undertakes to explain a new and accurate method of finding by projection on Mercator's chart, the *true bearing of the land*, the *errors of longitude* by chronometer consequent to an error of latitude, and the *sun's true azimuth*, by ONE ALTITUDE OF THE SUN, with the true Greenwich time, when the latitude, longitude, and apparent time at the ship are uncertain! It must be evident to every practical navigator, that a discovery of a simple method of determining with accuracy the true position of the ship, by a single altitude of the sun, when it bears neither east nor west, nor north or south, must be of great importance, constituting one of the most remarkable improvements in navigation which have been made during the present century. And this discovery has been made by Captain Sumner.

We have examined with attention the work before us, in which the author clearly and fully explains the principles on which his calculations are based. They can be easily comprehended, and the calculations are, even now, familiar to every shipmaster. Captain Sumner, by this work, has rendered a great service to the mercantile community; and deserves the thanks of all who are directly or indirectly interested in commerce. He deserves more than thanks, and we hope he will receive a *substantial* reward for the discovery of the principles referred to, and for his labor in laying these principles in such a clear and satisfactory manner before the public.

The following is the rule given by Capt. Sumner, for projecting on Mercator's chart a line, diagonal to the parallels of latitude and meridians of longitude, called a *parallel of equal altitude*, which shall pass through the position of the ship, and show by inspection the bearing of the land, the errors of lontitude by chronometer consequent on errors in latitude by dead reckoning, and the sun's true azimuth:

"*Rule* 1. 1st. Select two latitudes, one of which is the next *degree* (without any odd minutes) *less*, and the other, the next *degree greater* than the latitude by dead reckoning.

"2 d. Find, in the usual way, the ship's longitude by chronometer, upon the supposition that she is in the *least* latitude assumed; and project this position on your chart in a point, which call A.

"3d. Find, in the same way, the ship's position, supposing she is in the *greatest* assumed latitude; and project this position also on your chart in a point, which call A.

"4th. Join these two points by a straight line, which produce as far as necessary; this line is an arc of a '*parallel of equal altitude*;' and it passes through the *true* position of the ship; and whatever *land* it passes through, bears from the ship in the same direction as the line lays on the chart.

"5th. The error of longitude by chronometer, at the time of observation, to which the ship is subject for an error of latitude by D. R. (when this latitude is used to find the apparent time,) amounting to *one degree*, is the difference of longitude between the points A and A; for half a degree, half that difference of longitude, &c.

"6th. Erect a perpendicular upon the projected straight line A A, on that side next towards the sun, and it will be in the direction of the sun's true bearing; and the angle it makes with the meridian is the true azimuth."

It will thus appear, says Captain Sumner, that the ship is *always situated on a line, perpendicular* to the sun's true bearing or azimuth.

The following extract will more fully illustrate the nature and importance of this discovery, and although it is not so stated in the work before us, we cannot avoid thinking, that this particular case, first directed the attention of Captain Sumner to the principles which he has subsequently more fully investigated and made known:

"Having sailed from Charlestown, S. C., 25th November, 1837, bound to Greenock, a series of heavy gales from the westward promised a quick passage; after passing the Azores, the wind prevailed from the southward, with thick weather; after passing longitude 21° W., no observation was had until near the land; but soundings were had not far, as was supposed, from the edge of the bank. The weather was now more boisterous, and very thick; and the wind still southerly; arriving about midnight, 17th December, within forty miles, by dead reckoning, of Tusker light; the wind hauled S. E., true, making the Irish coast a lee shore; the ship was then kept close to the wind, and several tacks made to preserve her position as nearly as possible until daylight; when, nothing being in sight, she was kept on E. N. E under short sail, with heavy gales; at about ten A. M., an altitude of the sun was observed, and the chronometer time noted; but, having run so far without any observation, it was plain the latitude by dead reckoning was liable to error, and could not be entirely relied on.

"Using, however, this latitude, in finding the longitude by chronometer, it was found to put the ship 15 min. of longitude, E. from her position by dead reckoning; which in latitude 52° N. is nine nautical miles; this seemed to agree tolerably well with the dead reckoning; but feeling doubtful of the latitude, the observation was tried with a latitude 10 min. farther N., finding this place the ship E. N. E. 27 *nautical* miles of the former position, it was tried again with a latitude 20 min. N. of the dead reckoning; this also placed the ship still farther E. N. E. and still 27 *nautical miles* farther; these three positions were then seen to lie in the direction of *Small's light*. It then at once appeared, that the observed altitude must have happened at *all the three* points, and at *Small's light*, and at the ship, at the *same instant of time;* and it followed that Small's light must bear E. N. E., if the chronometer was right. Having been convinced of this truth, the ship was kept on her course, E. N. E., the wind being still S. E., and in less than an hour, Small's light was made bearing E. N. E ½ E., and close aboard.

"The latitude by dead reckoning was erroneous eight miles; and if the longitude by chronometer had been found by this latitude, the ship's position would have been erroneous thirty-one and a half *minutes of longitude*, too far *W.*, and eight *miles* too far *S.* The ship had, from current, tide, or error of log, overrun her reckoning, one mile in twenty.

"Thus it is seen, that an observation, taken at *any* hour of the day, and at any angle between the meridian and *E.* or *W.* points, is rendered *practically* useful, inasmuch as the chronometer can be depended on."

Other important problems are solved on these principles, with examples for the learner; one of which is, by means of two correct altitudes of the sun's centre taken in the forenoon and afternoon, and times of observation by chronometer, to project two corresponding straight lines on Mercator's chart, showing their mutual intersection, the true latitude and longitude, and likewise the results of the foregoing problem. This work also contains some valuable remarks on the advantages of this method, and an explanation of the principles upon which it depends;

directions for the application of these principles to the fixed stars, planets, and moon; remarks on the currents in the Gulf of Mexico and the Florida stream; and illustrative engravings, the whole constituting a handsome and elegantly printed volume of eighty pages, which is published by Thomas Groom & Co., No. 82, State street, and which ought to be in the hands of every navigator who has a chronometer in his possession.

This method of Capt. Sumner's is strongly recommended by Professor Pierce, of Cambridge, by Capt. Josiah Sturgis, and by a committee of the "Naval Library and Institute" on this station, consisting of Lieutenants James Alden and Samuel R. Knox, and Passed Midshipman George H. Preble.—*Boston Mercantile Journal.*

Paine's Telescope.—Mr. Paine has furnished to the Worcester Palladium a description of a telescope which he is constructing, the tube being forty-eight feet long and four feet in diameter. This enormous tube, made of Russia iron, is supported on a cast iron frame, like the sides of a heavy gun-carriage, and the frame is made to traverse by means of wheels and pinions, on a circular rail-way eighteen feet in diameter. The concave mirror at the power end of the tube is forty-six inches in diameter, and its focal length is forty feet; the lenses are six inches and a quarter in diameter. Mr. Paine says:

It is well known that *aberration of rays* is the result of a very high magnifying power; and this optical fact has led many to assert that distinct telescopic action is limited to some twelve or eighteen hundred powers; for in order to obtain a highly magnified image of an object, without aberration, a combination of lenses is requisite; and it is evident that the more dense a medium becomes the more faint the reflection of the image passing through it will appear.

The only part of the instrument which we claim as our own is *the form and combination of the lenses*, which, so far from being limited by *eighteen hundred powers*, claims a magnifying power of *eleven thousand*.

The mirrors, which are by far the most difficult part of the work, are finished, together with the lenses and all the small apparatus.

For the Mercantile Journal.

Mr. Editor: I was exceedingly interested in the facts which you stated last evening with respect to the telescope which Mr. Paine is now constructing. If his plan should prove successful, he will be likely to make important *discoveries*.

The great reflecting telescope of Mr. Herschell, at Eton, near Windsor Castle, though its magnifying power was but little more than *six thousand*, enabled him to extend the domains of astronomical science. What may we not expect from our intelligent and enterprising fellow citizens, when he claims for his projected instrument, a magnifying power of *eleven thousand*.

The cylindrical, sheet iron tube of Mr. Herschell's telescope was thirty-nine feet four inches in length, and four feet ten inches in diameter. The great mirror was made of metal, forty-nine inches and a half in diameter, and three inches and a half in thickness, and weighed 2118 pounds. The mechanical contrivances for supporting and directing the tube, exhibited much ingenuity, though it was far more complicated than the machinery proposed by Mr. Paine. An accurate account of the instrument, with all its fixtures, and the manner of using it, may be found in the Transactions of the Royal Society for 1795, accompanied by eighteen illustrative plates. It was completed August 28, 1789, on which day Mr. H. discovered the sixth satellite of Saturn.

The irregularities in the surface of the moon, were distinctly perceptible by Mr. Herschell's telescope. How strange the developments which may be Mr. Paine's, with nearly double the magnifying power! Mr. H. determined that the planet which bears his name *is* a planet, and not, as previously supposed, a fixed star. It is not improbable that Mr. Paine may decide that, in the wide space which intervenes between the planets and the fixed stars, there are other bodies which belong to the solar system. The prospect before him, by anticipation, is truly sublime. Who would not like to accompany him in his profound researches among the handiworks of God? May Providence benignly smile upon his efforts, and allow him to gather from the heavens fresh phenomena for the extending and enriching of the science to which he is so enthusiastically devoted.

A Lover of Astronomy.

Mr. Lear's New Submerged Water Wheel, for propelling vessels, is certainly a great curiosity, and if it works as well on a large scale, as it does in the model, it will be an invaluable improvement. A correspondent, who had the pleasure of seeing the model in operation, on Monday, in a common clinker-built boat, about twenty feet in length, writes, that it was propelled by the acting power of four men turning winches or cranks. The wheels are under the bottom of the boat, and out of the reach of accidents. The steersman has complete control of the motion of the wheel, *independent of the engineer*, and causes the boat to move forwards, backwards, sideways, obliquely to the right or left, to turn on her centre, *or to stand still*, the wheels all the time revolving in the same direction, and with the same velocity. She moves at the rate of about five miles an hour, worked as the machinery is, to great disadvantage, by man power, instead of steam, the four men turning the crank, being, of course, only equal to the actual power of two men constantly exerted. And, what is of inestimable importance, the rudder, though very convenient and useful in steering, is not *necessary*, and its loss would not be attended with the danger necessarily attendant upon such an occurrence in any other vessel. At the first cry of "breakers ahead," or any other alarm rendering it necessary to reverse or change the course of the vessel, the steersman, without communicating with the engineer, or any other person, can instantly reverse or change the direction of the propelling power; and, as soon as the headway can be overcome, the course of the vessel may be reversed.

There is not, in this wheel, the same loss of power which is experienced in those of all other constructions. The wheels of the Caledonia, for instance, under the most favorable circumstances, revolve, as we are informed, seventeen miles, while the ship is moving through the water only twelve miles; but while Mr. Lear's wheel is revolving seventeen miles, the boat has moved through the water fifteen: being a loss of only two miles in seventeen, while in the Caledonia the loss is five miles in seventeen. In the other Cunard steam-ships, the loss is still greater, and in most other steam vessels it is greater still. When steam power is applied to Mr. Lear's wheels, he thinks the loss will be still less than it is now.

Another advantage, still, is possessed by this construction. If an accident happens to a wheel at any time, or it should in any way get out of order, it can immediately be taken on deck for repair, and replaced without difficulty, while the other wheel is still propelling the boat ahead.—*Courier.*

Pensacola Navy-Yard.—It is much to be regretted that Congress failed, at its last session, to make an appropriation for the permanent improvements so much needed at that important naval station. It will scarcely be credited that this navy-yard, (so called,) the only one south of Norfolk, and of such vital importance to all the southern and south-western States, is as yet only a bare sand-beach, without even a wharf at which a gun-brig, much less a sloop-of-war or a frigate, can lie to be repaired or receive stores. There is, of course, no masting shears, or place at which the smallest class vessel can be careened.

An attempt was made, some years ago, to build a landing wharf there, but unfortunately the work was entrusted to men entirely unacquainted with the great difficulty of founding works in deep water. A man may be a good ship-builder or an able commander, but it does not follow that either of those professions qualifies him to execute one of the most difficult works in civil engineering. The result of this experiment was, that from one hundred and fifty to two hundred thousand dollars were sunk and totally lost on a work that it was supposed could be built for some thirty thousand dollars!

Mr. Upshur, while Secretary of the Navy, with the wisdom and sound policy that so eminently distinguished his administration, appointed Mr. Herron, the well-known civil engineer, to construct a permanent wharf, with instructions to build on the old work, if it could be safely relied on for a good foundation. Hr. Herron has made a thorough examination of the sunk work, and it is understood has reported that it would not only be unsafe, but also much more costly to build upon it than it would be to erect an entirely new work on a more eligible site. Mr. Herron has, accordingly, made a plan and estimate of a work to be built in the most permanent manner, and devised means for securing the foundation, which was an unusually difficult task, and required much that was original in design as well as in the mode of execution. Unfortunately, Congress failed to provide money for the prosecution of the work. It is to be hoped, however, that our Delegate will lose no time, after the opening of Congress, in calling for Mr. Herron's reports, and urging on that body to provide for its execution.

At Mr. Herron's instance, the five dredging machines belonging to the War Department, which were lying rotting at Mobile, were turned over to the navy. The large dredge, *Balize*, had been partly repaired, and would soon be in a condition to excavate the foundation and deepen the shoals around the yard. And we think it would be well if Congress should make an appropriation of a sum to authorize Mr. Herron to try the powers of the dredge on the bar at the mouth of Pensacola harbor, so that ships-of-the-line might be brought in.—*St. Augus. News.*

U. S. Ship Vincennes.—The schooner Euphrates ran ashore on the Caucus Reef, night before last. At daylight yesterday morning she was discovered from the United States ship *Vincennes* with her colors half mast. Captain Buchanan immediately despatched boats with hawsers and anchors and a strong force to her assistance. They labored hard with her all day yesterday, and succeeded in getting her some fifty feet over the reef, but at sunset she was still hard aground in four feet and a half water. Captain B. despatched a fresh party of men from the *Vincennes*, with buckets, &c., who remained with the schooner over night, and kept her free at least by bailing and pumping. At daylight this morning her colors were still half-mast, and after breakfast-time her mainmast was seen by the *Vincennes*, to go over, the cutting away of which is taken as an indication that she will be lost. Much credit is due to Captain B. for his promptness in endeavoring to rescue her from her perilous situation, and what may be saved from her will be saved by his kind assistance.—*Pensacola Gazette, July* 29.

Ten Gun Brigs for the Navy.—It is to be hoped that our government will cease building this class of vessels for our navy. If we continue it, it will be but pursuing a system direful in the experiment, which has been well tried by the British government. Our late English papers tell us that in a debate in the British House of Commons on the 20th June last, Captain Berkly called the ten gun brigs "sea coffins," and said he was prepared to prove that they were a dangerous and useless class of vessels for her Majesty's service—that out of twenty-two vessels lost in the British navy since 1816, eleven of them were ten gun brigs, which had *foundered at sea*, as they had never been heard of, not a soul having escaped to tell the tale! Captain Berkly was supported in his opposition to the "ten gun brig system" by Captain Pechill, Captain Plumridge, and Sir Charles Napier. Now it is clear to us, if this class of vessel is unfitted for the protection of British commerce, and are regarded by those distinguished British naval captains as "sea coffins," they cannot be desirable and efficient vessels for the protection of our commerce; and looking to the loss of the U. S. schooner Grampus, of ten guns, we feel like regarding them as Captain Berkly does, "*sea coffins*" for our officers and seamen.—*Baltimore Patriot.*

ISLAND IN THE PACIFIC.

NEW YORK, *August* 11, 1843.

To the Editors of the Commercial Advertiser :

Having seen in your journal, a few days since, some account of an island said to have been recently discovered in the Pacific Ocean, in latitude 11° 05′ south, and longitude 165° 05′ east, by Captain Nitcher, commanding the barque Isabella, of Fairhaven, I have taken the liberty of sending you a few facts in regard to the early discovery of this island, which I trust may correct the wrong impression of Captain Nitcher in supposing himself the original discoverer.

The island here spoken of was first discovered by the unfortunate La Perouse, during his first cruize in those seas, in the Astrolabe, a French corvette, which vessel was lost in a subsequent cruize, at the island of Mallicolo, together with her consort, whose name I cannot now remember. Both vessels were wrecked in the same gale, and all on board were supposed to have perished.

The celebrated French navigator Count d'Urville likewise visited this island, on his first cruize in the South Pacific, and has placed it on his chart in longitude 165.09° east, and latitude 11.02′ south, retaining the native name, "Nitendi." I have an old French chart in my possesion in which this island is conspicously laid down, and from my own personal observations while cruizing in that part of the Pacific Ocean, I am satisfied that no other island exists in the location given to "Eadie's Island" by Captain Nitcher, nearer than Tinarkoro, a small, low, cocoa nut island, bearing north half west from Nitendi, distant forty miles; the next nearest island being Toupona, bearing southeast, distant fifty-four miles.

I first saw this island in February of 1835; we had run down the Solomon Archipelago, touching at, and trading with the natives of all the inhabited islands of the group, as far as the "Three Sisters," when we steered to the eastward, intending to make Duff's Islands, the most northern inhabited group of the New Hebrides Archipelago. We continued steering to the eastward until midnight, when, being fearful of getting too close on to the low island of Tinakoro, and the wind hauling to the eastward with threatening weather, we kept away to the southeast, our chart indicating a clear sea in that direction for about one hundred miles. At daylight we discovered land close under our lee, and supposing that we had overrun our reckoning, and that the island, which was a large one, could be no other than Vanakoro, we hauled on a wind and stood along the land to the eastward, until daylight convinced us that it was some other island. On computing the distance run during the night, we found our position some sixty-five miles northwest of Vanakoro, and concluded at once that this was a new discovery.

We ran close in to the southeast end of the island in search of an anchorage, there being a small island about half a mile from the main, which presented the appearance of forming a good harbor, but on a nearer approach we discovered that it was connected with the main island by a coral bed in four fathoms of water. We lay off and on, and lowered a boat for the purpose of examining the island. The boat returned after examining the passage between the islands, having observed some huts, built upon piles on the beach of the main land, and a village of some considerable size farther to the eastward. Several canoes came off to us soon after the boat returned, but seemed afraid to approach too near, until we showed them some of our trinkets, and by signs, made them understand that we wanted to trade. After much persuasion they were induced to come alongside, and having disposed of some fish and a few nautilus shells they started for the shore. Two other canoes soon after came off with more shells, but as they had no articles that we were in search of we left them, steering to the northeast for Duff's Islands. Before leaving them, however, we learned from the natives that their island was named Nitendi, and that the small island adjoining was called Tumebouve.

The ears of one of the chiefs were ornamented with strings of blue glass beads, and in his hand he held something that resembled an adze, made from an iron hoop. One of the canoes contained a common black porter bottle, which the owner seemed to prize very highly. The natives were very noisy and clamorous when we succeeded in making them understand that we did not wish to purchase their paddles, spears, and ornaments, in return for which they demanded iron. We were convinced at once, on seeing the iron and bottle, that some European or American vessel had been there before us, and of course were then satisfied that it was no new discovery of ours, but as neither of these islands is laid down on either Arrowsmith's or Horsbourg's charts, we called them in our log-book Nitendi and Tumebouve, which are the native names. At meridian, the centre of the main land bearing about west, our latitude was 11.01° south, and by an excellent chronometer, sight taken 3h. 15m. P. M., the island bearing southwest half west, distant seven miles, our longitude was 165° 13′ 30″ east.

A few months after the time here spoken of, at Port Jackson, New South Wales, we came in possession of a chart with the island in question put down upon it, in very near the location I have just described; and since my attention was called to this subject, by the notice in your paper of "a new discovery in the South Pacific," I have, by examining my charts and private journal, become satisfied, beyond a doubt, that "Eadie's Island" and "Nitendi" are one and the same thing. Of this fact I am still more fully convinced on looking over the account given of this same island by M. J. Arigo, in his "*Souvenirs d'un Aveugle la Voyage Autour du Monde*," in which he calls it an uninhabited island; but in regard to this fact he could not have satisfactorily informed himself, as he did not approach sufficiently near to the land, and the weather was so tempestuous that the natives would have been deterred from coming off.

The description of this navigator agrees precisely with the notes in my journal, as to location, appearance, &c.; and I have therefore come to the conclusion that Captain Nitcher must have made a gross miscalculation in his reckoning, if he has really dis-

covered an island, or he has seen the island of Nitendi, and not observing it on his chart, nor finding it in his "Bowditch," has supposed it a new discovery.

The island in question may be found conspicuously laid down on a French chart, entitled:

"Carte Générale de l'Ocean Pacifique, dressé par M. M. D'Urville et Lottin, d'apres les reconnoissances de la Corvette l'Astrolabe et les decouverts les plus recents." 1833. Revue en 1834."

MORREL.

General Order.—The following is a copy of a General Order, issued by the Commander of the Squadron in the Mediterranean:

The Secretary of the Navy having decided upon occasional interchanges of the U. S. vessels comprising the squadrons on the Mediterranean and Brazil stations, directed such interchange to commence with the U. S. ships Delaware and Columbus.

The command upon this station consequently devolved upon me as senior officer, on my arrival here, in obedience to those directions; and Commodore Morgan has relinquished the command and transferred to me his instructions from the Department.

The commanding and other officers of the different vessels of the squadron, will therefore, hereafter make their reports and receive their orders, in conformity with this change.

In succeeding to the command of this squadron, it affords me great pleasure to express my gratification at the high order, and apparent efficiency and readiness for any service of the different vessels which belong to it.

Their condition furnishes evidence of the prevalence of a discipline and zeal calculated to give a confidence and pleasure to the friends of the navy, and highly creditable to my predecessor in command, and to the commander and other officers of the respective vessels. The general orders issued by Commodore Morgan, are to be obeyed by the officers attached to the ships lately under his command until otherwise directed.

Commodore Morgan will soon proceed in the Columbus to Brazil, to assume the command of the U. S. squadron on that station, under directions from the Navy Department; and I feel assured the officers he is about to leave will cordially unite with me in the wish, that his change of command may be useful to the navy, and every way agreeable to himself.

C. MORRIS,

Com. U. S. Squadron on Mediterranean station.

U. S. Ship Delaware, *Port Mahon, April* 24, 1843.

Information Wanted.—The Editor of the Daily Advertiser, published at Detroit, in Michigan, asks for information concerning Alonzo Cole, who enlisted on the 16th day of October, 1840, at the city of New York, in the third regiment of artillery, which was ordered to Florida the November following. If he be still alive, and will make known his present residence, the Advertiser says he will hear of something greatly to his advantage.

FALL OF AEROLITES.

ACADEMY OF SCIENCES, JUNE 12, 1843.

The details of this phenomenon, which occured on the 2d of June, were furnished by Prof. Van Rees, to M. Quetelet at Brussels, and by him communicated to Arago.

M. Quetelet says: "The phenomenon I am about to mention took place in the environs of Utrecht, about eight o'clock on the evening of the 2d of June. The sky was overcast. There was heard in the neighboring villages, and even to a distance of thirteen to sixteen miles a loud detonation similar to that of three or four cannon, followed by a rumbling sound, which a majority of the witnesses compared to military music or to the sounds of an æolian harp. Great consternation was caused thereby to the inhabitants in the country. In addition, persons near to the place of the fall, distinctly heard the rushing of a body rapidly traversing the air. The noise appeared to be directed from west to east, and may have lasted two or three minutes.

At the same time, in the commune of Blaauwkapel about three miles northwest of Utrecht, a peasant who was returning from the fields with his horses, saw a heavy body fall at a short distance on the ground, and a cloud of dust elevated to a great distance. Having returned to the spot after disposing of his horses, he remarked a conical hole, widest at top, from the bottom of which a black stone was drawn out. This stone, or rather, this aerolite had penetrated in a vertical direction about three feet, being arrested in its descent by a bank of wet sand. The conical form of the hole appeared due to the force with which the aerolite had thrown out the earth in penetrating it; the soil being found projected at considerable distances around it. It is believed that a quarter of an hour elapsed between the instant of the fall and the time the stone was taken out. Its weight was fifteen pounds and a half.

On the 6th of this month there was taken from a deep hole, where it was seen to fall at the instant of the explosion on the 2d, a second aerolite weighing six pounds. Its position was two miles east of where the fomer fell.

The two aerolites are of a figure irregularly polyhedric, with rounded edges. Their faces present hollows which are most remarkable in the smaller of the two bodies. They are entirely covered with a rough black crust, in which there are small cracks or fissures. At the spots where the crust is broken, the interior surface is seen to be grained, greyish, and scattered with brilliant particles of meteoric iron. They consequently belong to the most common species of aerolites, and are similar to those which fell at Aigle in 1803 and Stannem in 1808."

The Berlin Gazette announces that the first man-of-war of Prussia and of the Customs of the Union, the corvette Amazon, was launched at Stettin, the 24th ult. She is to mount fourteen guns and one hundred men, and to be commanded by a Danish officer, Baron Dirnkinck Halenfield.

GRAMPUS.—We congratulate the writer of the following communication, and the fortunate individuals he has named, on their escape from a watery grave, to which they were innocently consigned by the records of the Navy Department.—*Norfolk Herald.*

U. S. SHIP PENNSYLVANIA,
NORFOLK, VA., *August* 21, 1843.

SIR: In reading your paper yesterday, I saw an account of the officers and crew reported lost in the U. S. schooner Grampus: One of them was Isaac Stevens, (Ship's Steward,) but I am very happy to state, that I am alive and well, and I wish, sir, you would correct it. There are several others mentioned in the list who did not go out of this port in her: Charles L. Clapp, seaman, George Benson, quarter-master, and James Smith, captain of forcastle.

Yours, &c. ISAAC STEVENS.

P. S.—I forgot to mention that I had been in her previous to her going to sea this last time about two years and four months, but left her, on account of my being sick.

I. STEVENS.

SLOOP-OF-WAR ALBANY.—We learn from the Brooklyn Daily News that the frame of this vessel is now up and the planking is proceeding rapidly. The model is said to combine every requisite for speed and capacity. She is sharp forward, with a clean run, and somewhat less flat on the floor than is now usual in vessel of this class, and having a greater breadth of beam and more depth, than our ordinary sloops-of-war, will be stiffer and able to bear a great press of canvas. We hazard nothing in saying the Albany in all respects will be superior to any sloop-of-war now afloat, belonging to the United States navy. We hope the figure head will not be forgotten.

THE GREAT BRITAIN STEAM-SHIP.—This magnificent vessel, which was launched lately at Bristol, is composed entirely of iron, and is the largest ever built since the days of Noah. There are no paddle-wheels or boxes, the Archimedian screw being used. Her burden is 3,600 tons, being 2,000 tons more than that of the Great Western. She will be propelled by engines of one thousand horse power combined. The following are her dimensions: Length from figure head to taffrail 322 feet; length of keel 289 feet; extreme width 50 feet 6 inches; she has four decks; the upper deck is flush, and is 308 feet long; the second deck consists of two promenade saloons, the aft one or first 110 feet 6 inches by 22 feet, and the forward or second class 67 feet by 21 feet 9 inches. The third deck consists of the dining saloons, the grand saloon measuring 96 feet 6 inches by 30 feet, and the second class 61 feet by 21 feet 9 inches. The whole of the saloons are 8 feet 3 inches high, and surrounded by sleeping births, of which there are 26, with single beds, and 113 containing two, giving 262 berths. This large number is exclusive of the accommodation which could be prepared on the numerous sofas. The fourth deck is appropriated for the reception of cargo, of which 1,200 tons will be carried in addition to 1,000 tons of coal. The forecastle is intended for the officers' and sailors' mess rooms and sleeping berths, with the sail-rooms underneath. The engine and boilers occupy a space of eighty feet in the middle portion of the vessel. The engine room and the cooking establishment are situated in this part of the ship. There are three boilers; these are heated by twenty-four fires, and will contain two hundred tons of water. There are four engines of two hundred and fifty horse power each, the cylinders of which are 7 feet 4 inches in diameter. The chimney is 30 feet high and 8 feet diameter. She is fitted with six masts, the highest of which is 74 feet above deck. The quantity of canvas carried will be about seventeen hundred square yards; she will be fitted with the patent wire rigging; the hull is divided into four water-tight compartments, and the quantity of coal consumed will be about sixty tons per day. Upwards of 1,500 tons of iron have been used in her construction and that of the engines and boilers; the draught of water when laden, will be 16 feet, and the displacement about 3,200 tons; the plates of the keel are from one to three quarters of an inch thick, and the other plates about half an inch thick; she is double riveted throughout; the ribs are formed of angle iron, six inches by three and a half inches, by half an inch at the bottom of the vessel, and seven-sixteenths thick at the top; the mean distance of the ribs is fourteen inches from centre to centre. All these ribs will be doubled; the distance is then increased to eighteen and twenty-one inches. The ship will be fitted with very powerful pumps, which can throw of 7,000 gallons of water per minute.

HYDROGRAPHICAL OFFICE.

WEATHER JOURNAL FOR THE WEEK ENDING SATURDAY, AUGUST 12, 1843.

DAYS.		Barometer.	THERMOMETERS. Attach.	Sun.	Rad.	Shade.	W. Bulb.	Dew Point.	WEATHER	Portion cloudy.	WIND.	Force.	Rain, inches.
Monday,	3 A. M.	30.166	76°	68°	69°	74°	63°	66°	Cum. strat.	.6	NW.	Airs.	
Do.	3 P. M.	30.136	83	110	111	87 5′	77	69	Cumulus.	.5	Airs.	Airs.	
Tuesday,	3 A. M.	30.116	81 5′	71	73	76	72	67	Cloudy.	.4	Calm.	.0	0.435
Do.	3 P. M.	30.088	84	76	80	84	74	70	Nimbus.	.8	S. SE.	.26	
Wednesday,	3 A. M.	30.112	79	65	69	71	66	63	Rain.	1.0	North.	.15	
Do.	3 P. M.	30.162	76	73	75	74	68 5′	67	Cloudy.	1.0	"	Light.	0.089
Thursday,	3 A. M.	30.136	75 5	64	68	69	65	60	Cirrus.	1.0	"	"	
Do.	3 P. M.	30.036	75	72	74	74	68	60	Nimbus.	.9	N. W.	"	
Friday,	3 A. M.	30.024	74 5	61	65	67	64	55	Cumulus.	.4	S. W.	Airs.	
Do.	3 P. M.	30.126	77 5	106	105	80	70	66	Cum. strat.	.0	Calm.	Light.	0.17
Saturday,	3 A. M.	30.126	74	60	51	66	59	56	Hazy.	.0	Airs.	.0	
Do.	3 P. M.	30.104	73	93	94	80 5	71	63	Cirrus.	.2			

Maximum variation of the needle, 1° 37′ 31,″ at 12 o'clock, August 11.
Minimum, " 1° 21′ 22,″ at 8 o'clock P. M. Aug. 9.
Mean variation for the week, " 1° 30′ 03.″

ARMY.

MILITARY ACADEMY.—Lieut. J. Gorgas, of the Ordnance, relieved from detail for duty at the Military Academy, and his place supplied by 2d Lieut. R. W. Johnston, of the 3d artillery.

NAVY.

Aug. ORDERS.

17—Lieut. H. J. Hartstene, brig Lawrence.
Lieut. John A. Russ, navy-yard, New York.
Lieut. W. B. Beverly, brig Lawrence.

18—Comm'r. Henry Bruce, command of brig Dolphin, *vice* J. D. Knight, relieved at his own request.
Sur. P. Christie, navy-yard, Portsmouth, *vice* S. Jackson, relieved.
P. Ass't Surgeon C. F. B. Guillon, navy-yard, Philadelphia.
P. Ass't Surgeon J. D. Miller, brig Perry.
P. Mid. Henry Rogers, steamer Poinsett, surveying.

19—Comm'r F. Varnum, receiving-vessel, Phila.
Comm'r S. W. Le Compte, do., Baltimore.
Boatswain John Hunter, sloop Yorktown.

21—Lieut. W. L. Maury, sloop Warren.
P. Mid. G. Guest, surveying duty.

22 Captain R. F. Stockton, com. of ship Princeton.
Lieuts. W. E. Hunt, E. R. Thomson, R. E. Johnson; Purser T. P. McBlair, and Mid. R. T. Renshaw, ship Princeton.
Comm'r G. A. Magruder, ordnance duty.
P. Mid. J. Dorsey Read, ship Levant.
Purser C. C. Rice, detached from brig Dolphin.
Mid. G. B. Douglass, detached from ship Vincennes.

23—P. Ass't Sur. J. Malcolm Smith, brig Lawrence, Baltimore.
P. Mid. L. Gibbon, schooner On-ka-hy-e.

Additional officers ordered to the frigate Savannah, at New York:
Lieutenants, W. Radford, W. B. Renshaw.
Midshipmen, R. R. Carter, E. C. Genet, S. P. Griffin, T. J. Miller, J. H. Fillotson.
Boatswain, George Wilmuth.
Prof. J. H. Belcher, frigate Savannah.

Aug. APPOINTMENT.

21—John C. Spencer, jr., to be a purser.

Naval Intelligence.

U. S. VESSELS OF WAR REPORTED.

Steamer Union, Lieut. Comd't Bell, dropped down on Saturday last, from the Navy Yard to the anchorage off the Naval Hospital, Norfolk.

HOME SQUADRON.—The Brig Dolphin arrived at Charleston, S. C., August 13th, in four days from Nassau. Officers and crew all well. The following is a list of her officers:

Commander, J. D. Knight; 1st Lieutenant, W. Decatur Hurst; 2d Lieutenant, C. S. McDonough; Acting Master, S. Marcy; Purser, C. Carleton Rice; Acting Surgeon, J. S. Messersmith; Midshipmen, M. Haxton, J. E. Hopson; Captain's Clerk, T. M. Callender; Master's Mate, D. Goffe Phipps.

PACIFIC SQUADRON.—A correspondent of the Baltimore American, under date of Lima, Peru, June 4, 1843, reports:

"The following men-of-war are on the coast: Frigate *United States*, Commodore T. Ap Catesby Jones, and Schooner *Shark*, Lieut. Comd't Eagle, in Callao Bay. Schooner *Dale*, Sloop *Cyane*, and Store-ship *Relief*, on California coast."

MEDITERRANEAN SQUADRON.—The following letter, dated New York, Tuesday, August 22, contains the latest intelligence from the Mediterranean:

The U. S. store-ship *Lexington*, Wm. M. Glendy, Lieutenant Commanding, arrived at New York this day, having on board a few of the officers of the Mediterranean squadron, and about fifty men, the latter having served out their time, and sent home to be paid off and discharged.

The *Lexington* left Port Mahon on the 17th July. The *Delaware* ship-of-the-line, Commodore Morris, left Port Mahon, on the same day, for Toulon. The sloop *Preble*, Commander Wilson, left same place about 13th July for the United States, touching at several ports along the Spanish coast.

The ship *Congress* and sloop *Fairfield* were cruising on the coast of Italy, and expected at Mahon about 1st November.

List of officers of the *Lexington:*

Lieutenant Commanding, Wm. M. Glendy.

Lieutenants, Theodore P. Green, Andrew T. B. Gray, Wm. Maury.

Purser, Wm. Speiden.

P. Ass't Sur., John T. Abernethy.

Acting Master, Edward C. Anderson.

Captain's Clerk, Joseph Hoban.

Midshipmen, Wm. A. Webb, Wm. W. Roberts, Dawson Phenix.

Acting Master's Mate, Colston Gale.

Purser's Clerk, Theodore Quastoff.

The following officers of the Mediterranean squadron were also on board:

Assistant Surgeon, S. M. Kellogg.

Lieutenant Marines, John D. Simms.

Midshipman, Edward F. Tattnal.

Boatswain, John Shannon.

AFRICAN SQUADRON.—On the 5th August the *Lexington* spoke the U. S. ship *Macedonian*, near the Western Islands. Officers and crew all well.

Marriages.

On the 11th inst., at Dewberry, Hanover county, Va., by the Rev. JOHN COOKE, CALLENDER ST. GEORGE NOLAND, Esq., U. S. Navy, to Miss MARY EDMONIA, only daughter of the late THOMAS NELSON BERKELEY, Esq.

On Monday, the 14th inst., in Buffalo, N. Y., CHARLES S. EMERSON, Esq., to Miss LYDIA MINERVA, second daughter of Commander STEPHEN CHAMPLIN, U. S. Navy.

On Thursday, the 17th inst., Mr GEORGE D. WISE, son of the late GEORGE S. WISE U. S. Navy, to LAURA, youngest daughter of Dr. FREDERICK MAY, of this city.

Deaths.

At Jefferson Barracks, Missouri, on the 5th inst., HELEN, daughter of Captain HENRY SWARTWOUT, U. S. Army, aged 2 years and 5 months.

In Savanna, Georgia, on the 10th inst., Mr. EDWARD L. FOX, U. S. Army, in the 24th year of his age.

At sea, on the morning of the 20th August, inst., SAMUEL WHITE, carpenter, U. S. navy, formerly of the navy-yard Washington, and lately attached to the U. S. sloop Fairfield.

Aug. ARRIVALS AT WASHINGTON.

15—Capt. W. G. Freeman, A. G. Dept., Hope Club.

19—Major W. Seawell, 7th infy., Georgetown.
Lieut. A. Lowry, rifles, Fuller's.
Capt. Wm. Wall, A. Q. M., Gadsby's.
Lieut. J. C. Terrett, 2d infy.
Col. J. G. Totten, Corps Engrs., Gadsby's Row.

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